VIRTUAL (WHAT IS) REALITY?

Virtual reality seems to have been the official 1990 computer industry buzzword: "What's brewing on the high-tech frontier? Virtual reality!" From The Wall Street Journal *to* Time *magazine, the media have embraced it with amazing zeal, in spite of its actual status as an embryonic technology whose widespread applications are far from defined, not to mention developed.*

Virtual, or "artificial," reality is contained in the silicon pathways of a computer. You can enter this reality in several ways, the most celebrated being the system developed by VPL Research and NASA/Ames: "eyephones" containing dual CRTs in a head-mounted goggle/motion sensing getup and the "dataglove," a Lycra glove with fiber-optic sensors that read the movement of your hand. The eyephones allow you to see into a computer-animated world, and your telepresent hand allows you to act in it. Other virtual reality ("VR") interface schemes promise to compete for dominance, including the inexpensive and very effective Mandala system developed by Vincent John Vincent (see last issue's Tech 2000 Gallery). It uses an Amiga computer and a video camera to put you on screen with an animated world that will react to your specific hand movements (you can play drums with a rock band, grab a creature that keeps ahold of you even when you let go, etc.). Applications of VR are wide ranging, from Mattel's Power Glove, the ultimate joystick for teenage video game gourmands, to architectural simulations that allow one to walk through a building before it's built, to telerobotics, where a user can assume the eyes and hands of a robot working in harsh or unreachable environments.

Pioneers in the VR field came together recently at the Whole Earth Institute's Cyberthon—a "24-Hour Adventure in Virtual Reality." Held at Colossal Pictures studios in south San Francisco, the event included exhibits and presentations from just about everyone in the field. From noon on Saturday, October 6 to noon on the next day, attendees experienced various demonstrations, played with killer toys, listened to a wide range of presentations, and generally tried to fight off sleep. On the one hand were speakers representing such "establishment" groups as NASA/Ames Research Center, IBM, Apple, VPL Research and Autodesk. On the other were a more eclectic group, including acid/space/computer visionary Timothy Leary and Grateful Dead lyricist/cyberculture observer John Barlow (who explored how "All Reality is Virtual"); novelist William Gibson, father of the cyberpunk literary genre (author of Neuromancer, Count Zero *and* Mona Lisa Overdrive*); Myron Krueger, artist and originator of the artificial reality concept; 60s character-icon Wavy Gravy, and consciousness explorer/writer Terence McKenna.*

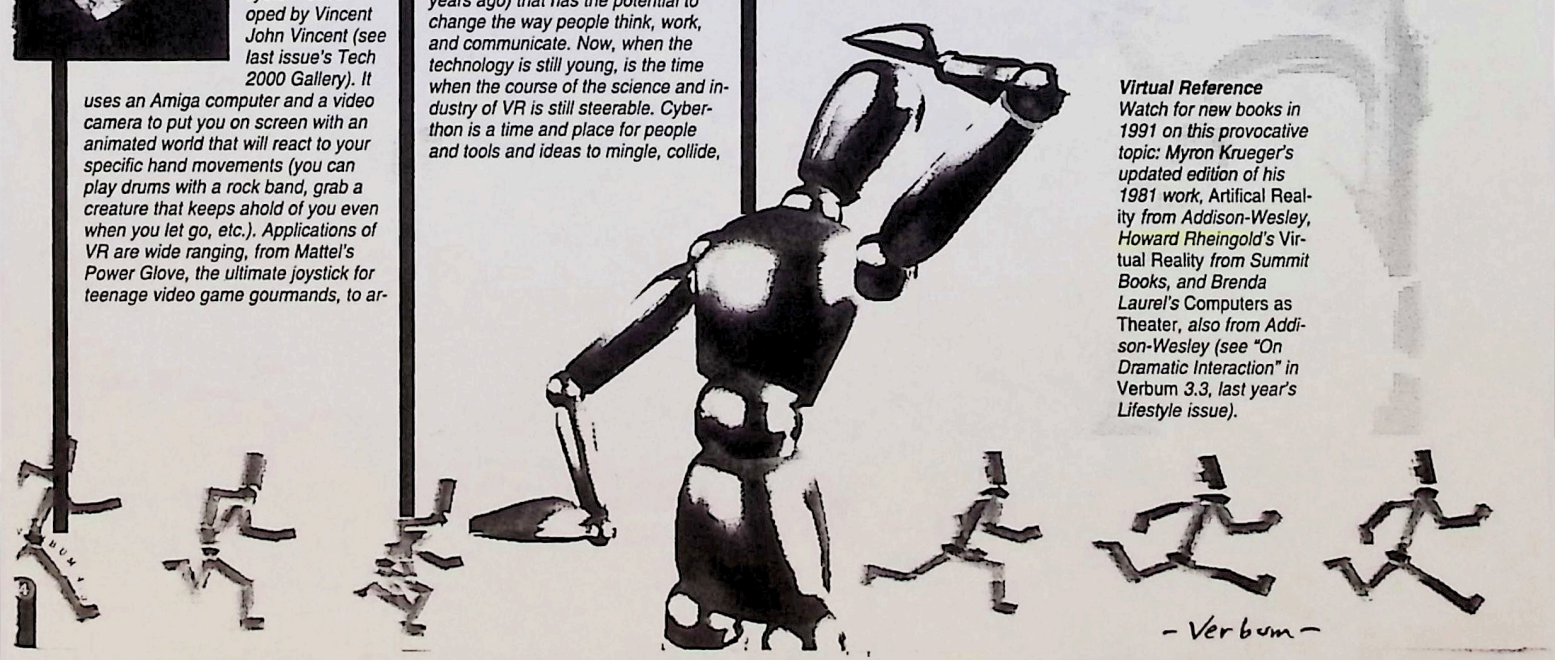
In the event program, organizer Howard Rheingold wrote, "It looks like virtual reality is one of those technologies (like personal computers, ten years ago) that has the potential to change the way people think, work, and communicate. Now, when the technology is still young, is the time when the course of the science and industry of VR is still steerable. Cyberthon is a time and place for people and tools and ideas to mingle, collide, debate, discuss, invent, decide, teach, learn and guide one another."

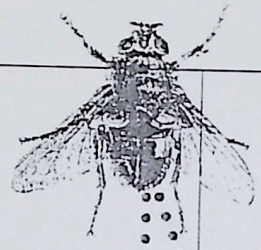
Barlow, in on the hatching of this elite party with Whole Earth's Kevin Kelly and Rheingold, proposed that it should be the "acid test of the '90s." He later observed that with the stiff attendance fee and other limitations, it didn't live up to the notion. But most attendees considered the event to be a worthwhile meeting of the minds of VR, helping to bring a broader, deeper conscience to the industry. William Gibson, the Canadian science-fiction writer whose vision of a dark future where individuals "jacked in" to the grid of cyberspace sparked the cyberpunk movement, observed dryly that he couldn't believe the Americans had the audacity to go and invent the technology that he'd used in his books as a vehicle for social commentary.

What is virtual reality? As Kit Galloway of the Electronic Cafe pointed out, when you're on the telephone having a conference call with three associates at different locations – where are you? – you are really all sharing a kind of cyberspace, a kind of artificial reality. And when we think about it, theater, radio, cinema, video games and television (especially interactive television) have been leading us right into virtual reality. So what's the big deal? As with all forms of media, as we saw repeatedly with last issue's focus on multimedia, important thing is the technology, it's not the delivery vehicle, it's what's being delivered. Once again, content.

–Michael Gosney

Virtual Reference
Watch for new books in 1991 on this provocative topic: Myron Krueger's updated edition of his 1981 work, Artifical Reality *from Addison-Wesley, Howard Rheingold's* Virtual Reality *from Summit Books, and Brenda Laurel's* Computers as Theater, *also from Addison-Wesley (see "On Dramatic Interaction" in* Verbum *3.3, last year's Lifestyle issue).*

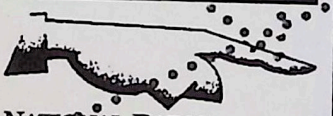




Overview: Predominantly a seminar conference, with a budding exhibit hall populated by approximately 50 of the leaders in multimedia (notably minus Apple Computer). With the growing acceptance of multimedia, this propitiously named event gets incrementally bigger every year — as does the accelerating diesel locomotive slowly go faster. Uniquely, the conference featured a series of "SuperSession" presentations not only led by but named for industry leaders, including MacroMind, Apple Computer's Multimedia Lab, Avid Technology, Autodesk, IBM, Farallon, Sony, Philips, Intel, AT&T and Hewlett-Packard. The conference also featured a robust selection of diverse multimedia sessions and workshops such as "Full Motion Video Hardware and Software Capabilities," "CD-ROM XA Multimedia Production," "Hypertext and Hypermedia Authoring," "Video Teleconferencing and Multimedia," "Artificial Intelligence and Multimedia" and "Multimedia Animation and Special Effects." And, of course, the conference featured a session on virtual reality.

Highlights: One of the most telling conference occurrences was the presence of ten different companies supporting PC-based video, including four for IBM compatibles (C-Cube Microsystems, IBM, New Media Graphics, Videologic) and six for the Macintosh (Aapps, Avid Technologies, Supermac, Radius, Raster Ops, Mass Micro Systems). The merger of the computer and television continues.

Analysis: Small but growing, with good people to mix with. Overall, perhaps the best selection of specifically multimedia-oriented sessions yet available in one conference. An obvious choice for people focusing specifically on the multimedia subset as a product or career direction.



NATIONAL RADIO-TELEVISION NEWS DIRECTOR'S ASSOCIATION

Details: September 24–27, 1990. San Jose Convention Facilities. The 45th annual. Produced by the National Radio-Television News Director's Association. Approximate attendance: 500.

Overview: The annual conference for the men and women who shape our knowledge of the world. Principally a schmoozing ("Let's talk business"), seminar ("News Technologies of the Future") and exhibits conference, featuring over 100 news industry–oriented equipment vendors (ranging from teleproduction and satellite equipment and circuit vendors to wire services and lobbyists.

Highlights: Topping the bill was the Monday night presentation that introduced the next generation of communications technologies as "here today" — apparently a first-time exposure for many of these news leaders. Both this and exhibit floor presentations covered interactive television, direct satellite broadcast, the fiber optic cable network, and the convergence of television, telephone and computer as common elements of tomorrow's consumer media. Also featured were soul-searching discussions regarding the ethics of the impending digital media (digital enables photorealistic image tampering), and the future of networks in the face of an eroding audience and continually evolving competition from cable networks (as Fox's plans for a news service were described, it was mentioned that there would likely only be enough revenue to support two of the three network news organizations).

Analysis: The reaction of surprise by news media leaders to many of the multimedia trends we (as "in-touch" designers and producers) already embrace points clearly to the relationship between the development of new media technology and its adaptation by real users — particularly real users such as these who are arguably the most influential leaders in our culture. We must remember that it is the end-user who will always determine our success as innovators.

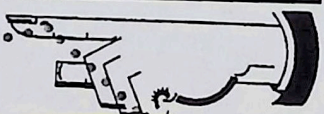
SOURCES 1990: THE CONFERENCE FOR ASIAN FINANCING OF EMERGING COMPANIES

Details: September 28–29, 1990. Santa Clara Convention Center. The first annual. Produced by the Asian American Manufacturing Association. Approximate attendance: 200.

Overview: Two-pronged conference designed to review major issues relating to Asia as a new source of entrepreneurial growth capital and to provide a means of introducing Asian investors and American entrepreneurs to substantive discussions that would lead to investments and strategic alliances. Included presentations on today's venture capitalists (by venture capitalists), the emerging role of Pacific Rim consciousness, Asian attitudes toward financing in the 90s, the structuring of American-Japanese strategic alliances and successful case studies. This area relates to multimedia as more and more new media companies automatically begin to look to the East as the principal source for development capital. Uniform of the day: the three-piece suit.

Highlight: Presentations were made by a significant number of Asian-based investment groups seeking American-based funding opportunities, including Champion Consulting Group (Taiwan), China-Vest (Hong Kong), Hambrecht & Quist (USA), MK Global Ventures (USA), Pacific Rim International (USA), Parteck International (Japan, Europe), Seoam Venture Capital Corporation (Korea), Vertex Management (Singapore), Walden Group (Taiwan) and Wearnes Group (Singapore). The most novel events were the 30-minute sessions set up between presenting investors and entrepreneurs with written business plans and proposals — an example of a conference activity designed to provide added value to all participants and real results for a lucky (and well-prepared, well-positioned) few.

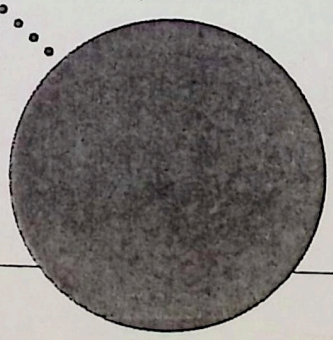
Analysis: Attendance revealed significant desire for overseas money, despite underlying resentment at continued growth of overseas ownership of American technology assets. Few "content" (consumer software) companies appeared as potential entrepreneurs — reflecting the Asian focus on manufacturing and commodity electronics. There was an interesting mix of principally Asian participants on both sides of the money, reflecting the continued influence of the Pacific Rim on Silicon Valley and its budding new media industries. Earnest investor interest was shown in the hardware-oriented, multimedia entrepreneurs preparing to move beyond prototype and into the realm of a minority-held company.



CYBERTHON

Details: October 6–7, 1990. Colossal Pictures, San Francisco. The first annual. Produced by Whole Earth Institute. Approximate attendance: 750.

Overview: Described as a "24-hour Adventure in Virtual Reality," undoubtedly the first megaparty to announce the arrival of late-20th-century humankind's final toy: full immersion within computer-generated environments — or virtual reality as it is popularly called (also known as virtual environments, virtual worlds, Cyberspace, and artificial reality). Produced within the large Colossal Pictures soundstage as a labyrinthine exploration of sights, sound and demos. Users could walk through darkened nooks, caves with glowing monitors, passageways and a circa-1950s virtual kitchen (complete with real peanut butter and white bread) to view products from nearly all of the companies now producing publicly announced virtual reality products (VPL, Sense 8, Autodesk, Simgraphics, Silicon Graphics, Fake Space Labs, Vivid Effect, TiNi Corp, Crystal River Engineering). The event featured the cyberband D'Cuckoo and a solid 24 hours of continuous speeches, presentations and panels peopled by most of the pioneers of virtual reality and the future of immersion. Preselected audience attendance was equally marked by a diverse mix of luminaries, doers and "enlightened voyeurs" ranging from Robin Williams, Bill Walton and Timothy Leary to Brian Eno, the Grateful Dead's John Perry Barlow, and the original cyberman, William Gibson, author of the instigating epic Neuromancer (from which the term "Cyberspace" was drawn). In essence, nearly the entire commercial virtual reality industry under a single roof. Tremendous fun.

Highlights: This was one of the first public events to attempt to grant a large number of "civilians" access to the actual experience of virtual reality (orchestrated via a partially effective lottery). It was also one of the first to address the socially responsible nature of many of the doers and thinkers behind the development of this increasingly controversial field (many argue that high-resolution immersion experiences will undermine our desire for the real thing). Among the many interesting topics addressed were the nature of the synthetic experience; the advent of direct retinal scanning (beaming the virtual reality experience directly into the eye); the relation of virtual reality, narrative time and storytelling; genres of virtual reality; 3D sound in virtual environments; the notion of "telepresence" and personal simulators; virtual reality applications and cultures; the generation of interactive characters in virtual reality; the relation of emotions to virtual reality; and the notion of the "Electronic Cafe," a virtual social space. The event closed with a Stuart Brand–chaired panel on the social and cultural implications of virtual reality that included William Gibson, VPL's Jaron Lanier and Colossal Pictures's Lawrence Wilkinson.

Analysis: Virtual reality comes of age. Given the projected cultural impact of virtual reality technology, an earthquake could have changed the future. A definite must-attend — if you're invited.